

IL
6/23/93

CRUDE OIL AND SPCC INSPECTION SAFETY PLAN

ECOLOGY AND ENVIRONMENT, INC.
SAFETY PLAN

Office: Chicago E & E Job # ZT 2051
TDD 705-9304-018A PAN # E05Z077CAA
DATE: 1 / 1

Incident Location:

American Steel; 927 Collin St.; Joliet, IL 60435
(815) 726-4274

Team Leader: Nichelle Foster Date: 6/23/93
Site Safety Officer: Lee Ende Date: 6/23/93
Approved by: _____ Date: 1 / 1

Incident Type: Spill Fire Hazardous Waste Site ☒ SPCC Insp.
If a hazardous waste site, give name: _____
Status: _____

Incident Response Objective:

☒ To perform a spill investigation and/or a SPCC Inspection
Other, Explain: _____

Background Review: Complete ☒ Partial

Documentation/Summary:

Overall Hazard: high moderate ☒ low unknown

Site sketch attached: yes ☒ no

Material Type (spill/waste/product) ☒ liquid sludge solid
gas/vapor

Potential Characteristics:

corrosive ☒ ignitable radioactive ☒ volatile
☒ toxic reactive biological agent

Dermal Toxicity: Low Other: _____

Chemical Name(s): oil

Quantity Involved: unknown Source: N/A
Cause: N/A

INCIDENT/SITE DESCRIPTION: Size of property unknown

Number of Storage tanks unknown Buildings unknown

Tank size _____ gallons, How many _____

Tank size _____ gallons, How many _____

Tank size _____ gallons, How many _____

Tank size _____ gallons, How many _____

Receiving Waters/Tributaries: Des Plaines River

Unusual Features (e.g., Sensitive areas, Endangered Species):
unknown

History: no background information

Personnel Protection:

Level of protection: A B C ✓ D

If downgraded, explain:

List specific protective clothing required:

1. steel toe boots 3. safety glasses 5. _____ 7. _____
2. hard hat 4. TLD Badges 6. _____ 8. _____

Field monitoring equipment and material required:

1. camera 3. measuring wheel 5. _____ 7. _____
2. tape measure 4. _____ 6. _____ 8. _____

Decontamination Procedures:

Hotline Location: N/A

List of Equipment: (Material and level of protection required)

- | | | | |
|--------|----|----|----|
| 1. N/A | 3. | 5. | 7. |
| 2. | 4. | 6. | 8. |

Site Entry Procedure:

Team Members

Karen Rydzewski Inc

Responsibilities

Team Leader/SSO

Special Instructions:

Avoid contact with oil. Observe safety protocol of facility and company. Monitor for H2S associated with crude oil when necessary.
Others:

Emergency Precautions:

Health Hazards: Low direct threat, but avoid contact with oil.

Acute Exposure Symptoms (if known): NONE KNOWN

First Aide Instructions: Wash with soap and water if exposed.
Others:

Emergency Information Sources:

Fire Department: 911

Police: 911

Ambulance: 911

Hospital: *St. Joseph's Silver Cross Hospital* (Rt 6) *Maple + Walnut*
815-740-1100

EPA Contact: Maureen O'Mara (312) 886-1960

Others: Mike Mangini, U.S. EPA
(312) 353-7625

Route to the hospital: *Collins to Jackson, stay*
on Jackson go east to Walnut (Jackson)
turns to Maple / Rt 6 on other side of
Walnut.

Emergency Telephone No.:

E & E Office: Chicago

EPA Region V Hotline: (312) 353-2318

Chicago: (312) 663-9415

Buffalo: (716) 632-4491

E & E Emergency Response Center: (716) 684-8940

ATATL: Pat Zwilling (Home)

(Office) (312) 663-9415

TATL: Tom Kouris (Home) (219) 924-1341

(Office) (312) 663-9415

Communications:

Nearest Telephone: TBD

Communication Used On-site: _____

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Common Synonyms		Oily liquid Colorless Floats on water
Stop discharge if possible. Call fire department. Isolate and remove discharged material. Notify local health and pollution control agencies.		
Fire	Combustible. Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.	
Exposure	Not harmful.	
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoals. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.	
1. RESPONSE TO DISCHARGE <small>(See Response Methods Handbook, CG 446-4)</small> Mechanical containment Should be removed Chemical and physical treatment		2. LABELS No hazard label required by Code of Federal Regulations
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: No common synonyms 3.2 Coast Guard Compatibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: Not listed		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Data not available 4.3 Odor: Data not available
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Goggles or face shield 5.2 Symptoms Following Exposure: If liquid is ingested, an increased frequency of bowel movements will occur. 5.3 Treatment for Exposure: INGESTION: Do not induce vomiting; SKIN: Wipe off, wash with soap and water; EYES: Wash with water for at least 15 min. 5.4 Toxicity by Inhalation (Threshold Limit Value): No single TLV applicable 5.5 Short-Term Inhalation Limits: Data not available 5.6 Toxicity by Ingestion: Grade 1: LD ₅₀ 5 to 15g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: Data not available 5.9 Liquid or Solid Irritant Characteristics: Data not available 5.10 Odor Threshold: Data not available		

6. FIRE HAZARDS 6.1 Flash Point: Data not available 6.2 Flammable Limits in Air: Data not available 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: Data not available 6.8 Electrical Hazard: Not pertinent 6.9 Burning Rate: 4 mm/min.	8. WATER POLLUTION 8.1 Aquatic Toxicity: Data not available 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent	9. SELECTED MANUFACTURERS 1. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 2. Exxon Co. Houston, Tex. 77001 3. Sun Oil Co. St. Davids, Pa. 19087
11. HAZARD ASSESSMENT CODE <small>(See Hazard Assessment Handbook, CG 446-3)</small> A-T-U	10. SHIPPING INFORMATION 10.1 Grade or Purity: Data not available 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: Not listed	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: Data not available 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: Data not available 13.8 Liquid Surface Tension: (test.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (test.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: Not pertinent 13.13 Heat of Combustion: (test.) = 18,000 Btu/lb = 10,000 cal/g = 420 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent
NOTES	

(Continued on pages 5 and 6)

OIL

OILS: CRUDE

Common Synonyms Petroleum		Oil liquid. Dark Acrid odor
Floats on water. Flammable vapor may be produced.		
Stop discharge if possible. Keep people away. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.		
Fire	Combustible. Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.	
Exposure	CALL FOR MEDICAL AID. VAPOR Not irritating to eyes, nose, or throat. LIQUID Irritating to skin and eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water.	
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.	
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 446-4) Mechanical containment Should be removed Chemical and physical treatment		2. LABELS No hazard label required by Code of Federal Regulations
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Petroleum 3.2 Coast Guard Compatibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.11.1267		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Dark 4.3 Odor: Offensive; tarry
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Goggles or face shield; rubber gloves and boots. 5.2 Symptoms Following Exposure: May irritate eyes and skin. 5.3 Treatment for Exposure: EYES: flush with water for at least 15 min. SKIN: wipe off and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): Data not available 5.5 Short-Term Inhalation Limits: Data not available 5.6 Toxicity by Ingestion: Data not available 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: Vapors are nonirritating to the eyes and throat. 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 5.10 Odor Threshold: Data not available		

6. FIRE HAZARDS 6.1 Flash Point: Data not available 6.2 Flammable Limits in Air: Data not available 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: Data not available 6.8 Electrical Hazards: Not pertinent 6.9 Burning Rate: 4 mm/min.		8. WATER POLLUTION 8.1 Aquatic Toxicity: 3 ppm/°/fresh water fish/toxic/fresh water 200 ppm/24 hr/corals: porites/20-90% normal response/salt water *Time period not specified. 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None																												
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerizations: Not pertinent 7.6 Inhibitor of Polymerizations: Not pertinent		9. SELECTED MANUFACTURERS 1. Exxon Co. Houston, Tex. 77001 2. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 3. Sun Oil Co. St. Davids, Pa. 19087																												
11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U		10. SHIPPING INFORMATION 10.1 Grades or Purity: Wide variety, depending on oil field where produced. 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)																												
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Combustible liquid 12.2 NAS Hazard Rating for Bulk Water Transportation: <table border="1"> <thead> <tr> <th>Category</th> <th>Rating</th> </tr> </thead> <tbody> <tr> <td>Fire</td> <td>1-3</td> </tr> <tr> <td>Health</td> <td></td> </tr> <tr> <td>Vapor Irritant</td> <td>0</td> </tr> <tr> <td>Liquid or Solid Irritant</td> <td>1</td> </tr> <tr> <td>Poisons</td> <td>1</td> </tr> <tr> <td>Water Pollution</td> <td></td> </tr> <tr> <td>Human Toxicity</td> <td>1</td> </tr> <tr> <td>Aquatic Toxicity</td> <td>2</td> </tr> <tr> <td>Aesthetic Effect</td> <td>4</td> </tr> <tr> <td>Reactivity</td> <td></td> </tr> <tr> <td>Other Chemicals</td> <td>0</td> </tr> <tr> <td>Water</td> <td>0</td> </tr> <tr> <td>Self-Reaction</td> <td>0</td> </tr> </tbody> </table>		Category	Rating	Fire	1-3	Health		Vapor Irritant	0	Liquid or Solid Irritant	1	Poisons	1	Water Pollution		Human Toxicity	1	Aquatic Toxicity	2	Aesthetic Effect	4	Reactivity		Other Chemicals	0	Water	0	Self-Reaction	0	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90 → 750°F = 32 → 400°C = 305 → 673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70-0.98 at 15°C (liquid) 13.8 Liquid Surface Tension: 24-38 dynes/cm = 0.024-0.038 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 140-150 Btu/lb = 76-86 cal/g = 3.2-3.6 × 10 ⁵ J/kg 13.13 Heat of Combustion: -18,252 Btu/lb = -10,140 cal/g = -424.54 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent
Category	Rating																													
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12.3 NFPA Hazard Classifications: <table border="1"> <thead> <tr> <th>Category</th> <th>Classification</th> </tr> </thead> <tbody> <tr> <td>Health Hazard (Blue)</td> <td>1</td> </tr> <tr> <td>Flammability (Red)</td> <td>3</td> </tr> <tr> <td>Reactivity (Yellow)</td> <td>0</td> </tr> </tbody> </table>			Category	Classification	Health Hazard (Blue)	1	Flammability (Red)	3	Reactivity (Yellow)	0																				
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NOTES																														

(Continued on pages 5 and 6)

Common Synonyms: Fuel oil 1-D Fuel oil 2-D	Oily liquid: Yellow-brown Lube or fuel oil odor Floats on water.
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.	
Fire	Combustible. Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.
Water Pollution	Dangerous to aquatic life in high concentrations. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.
1. RESPONSE TO DISCHARGE <small>(See Response Methods Handbook, CG 446-4)</small> Mechanical containment Should be removed Chemical and physical treatment	2. LABELS No hazard label required by Code of Federal Regulations
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Fuel Oil 1-D Fuel Oil 2-D 3.2 Coast Guard Compatibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.1/1270	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Light brown 4.3 Odor: Like fuel oil
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Goggles or face shield. 5.2 Symptoms Following Exposure: If liquid is ingested, an increased frequency of bowel movements will occur. 5.3 Treatment for Exposure: INGESTION: do NOT induce vomiting. SKIN: wipe off, wash with soap and water. EYES: wash with copious amounts of water for at least 15 min. 5.4 Toxicity by Inhalation (Threshold Limit Value): No single TLV applicable. 5.5 Short-Term Inhalation Limits: Data not available 5.6 Toxicity by Ingestion: Grade I: LD ₅₀ 5 to 15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary. 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 5.10 Odor Threshold: Data not available	

6. FIRE HAZARDS 6.1 Flash Point: (1-D) 100°F C.C.; (2-D) 125°F C.C. 6.2 Flammable Limits in Air: 1.3—6.0 vol. % 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: (1-D) 350-625°F (2-D) 490-545°F 6.8 Electrical Hazards: Not pertinent 6.9 Burning Rate: 4 mm/min.	8. WATER POLLUTION 8.1 Aquatic Toxicity: 204 mg/l /24 hr/juvenile American shad/ TL _m /salt water 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None								
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent	9. SELECTED MANUFACTURERS 1. Exxon Co. Houston, Tex. 77001 2. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 3. Sun Oil Co. St. Davids, Pa. 19087								
10. SHIPPING INFORMATION 10.1 Grade or Purity: Diesel Fuel 1-D (ASTM); Diesel Fuel 2-D (ASTM) 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)									
11. HAZARD ASSESSMENT CODE <small>(See Hazard Assessment Handbook, CG 446-3)</small> A-T-U	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 550–640°F = 288–338°C = 561–612°K 13.4 Freezing Point: 0 to –30°F = –18 to –34°C = 255 to 239°K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.876 at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: Not pertinent 13.13 Heat of Combustion: (est.) –18,000 Btu/lb = –10,000 cal/g = –420 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent								
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Combustible liquid 12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: <table data-bbox="943 1391 1195 1476"> <thead> <tr> <th>Category</th><th>Classification</th></tr> </thead> <tbody> <tr> <td>Health Hazard (Blue)</td><td>0</td></tr> <tr> <td>Flammability (Red)</td><td>2</td></tr> <tr> <td>Reactivity (Yellow)</td><td>0</td></tr> </tbody> </table>	Category	Classification	Health Hazard (Blue)	0	Flammability (Red)	2	Reactivity (Yellow)	0	(Continued on pages 5 and 6)
Category	Classification								
Health Hazard (Blue)	0								
Flammability (Red)	2								
Reactivity (Yellow)	0								
NOTES									

Common Synonyms		Oily liquid Pale yellow Weak odor Floats on water
Stop discharge if possible. Call fire department. Isolate and remove discharged material. Notify local health and pollution control agencies.		
Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.	
Exposure	Not harmful.	
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.	
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 446-4) Mechanical containment Should be removed Chemical and physical treatment		2. LABELS No hazard label required by Code of Federal Regulations
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Soybean oil 3.2 Coast Guard Competibility Classification: Ester 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: Not listed		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Pale yellow 4.3 Odor: Weak
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Goggles or face shield. 5.2 Symptoms Following Exposure: None — is a food. 5.3 Treatment for Exposure: EYES: flush with water for at least 15 min. 5.4 Toxicity by Inhalation (Threshold Limit Value): Not pertinent 5.5 Short-Term Inhalation Limits: Not pertinent 5.6 Toxicity by Ingestion: None 5.7 Late Toxicity: None 5.8 Vapor (Gas) Irritant Characteristics: None 5.9 Liquid or Solid Irritant Characteristics: None 5.10 Odor Threshold: Data not available		

6. FIRE HAZARDS 6.1 Flash Point: 540°F C.C. 6.2 Flammable Limits in Air: Data not available 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water or foam may cause frothing. 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: 833°F 6.8 Electrical Hazards: Not pertinent 6.9 Burning Rate: Data not available		8. WATER POLLUTION 8.1 Aquatic Toxicity: Data not available 8.2 Waterlow Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): 39%, 5 days 8.4 Food Chain Concentration Potential: None								
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent		9. SELECTED MANUFACTURERS 1. Ashland Oil Co. Chemical Products Division Peoria, Ill. 61601 2. A. E. Staley Manufacturing Co. Decatur, Ill. 62525 3. Arthur C. Trask Corp. 7666 W. 63rd St. Argo, Ill. 60501								
11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U		10. SHIPPING INFORMATION 10.1 Grades or Purity: Data not available 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)								
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: <table><tr><th>Category</th><th>Classification</th></tr><tr><td>Health Hazard (Blue)</td><td>0</td></tr><tr><td>Flammability (Red)</td><td>1</td></tr><tr><td>Reactivity (Yellow)</td><td>0</td></tr></table>		Category	Classification	Health Hazard (Blue)	0	Flammability (Red)	1	Reactivity (Yellow)	0	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: Very high 13.4 Freezing Point: -4°F = -20°C = 253 K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.92 - 0.93 at 15°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: Not pertinent 13.13 Heat of Combustion: (est.) = 16,000 Btu/lb = -8,870 cal/g = -371 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent
Category	Classification									
Health Hazard (Blue)	0									
Flammability (Red)	1									
Reactivity (Yellow)	0									
(Continued on pages 5 and 6)										
NOTES										

OVG

OILS, EDIBLE: VEGETABLE

Common Synonyms	
Oil; liquid	Pale yellow
Weak, fatty odor	
Floats on water.	
Stop discharge if possible. Call fire department. Isolate and remove discharged material. Notify local health and pollution control agencies.	
Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.
Exposure	Not harmful.
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 445-4) Mechanical containment Should be removed Chemical and physical treatment	2. LABELS No hazard label required by Code of Federal Regulations
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: No common synonyms 3.2 Coast Guard Competibility Classification: Ester 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: Not listed	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Colorless to pale yellow 4.3 Odor: Weak fatty
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Goggles or face shield. 5.2 Symptoms Following Exposure: None—is a food. 5.3 Treatment for Exposure: EYES: flush with water for at least 15 min. 5.4 Toxicity by Inhalation (Threshold Limit Value): Not pertinent 5.5 Short-Term Inhalation Limits: Not pertinent 5.6 Toxicity by Ingestion: None 5.7 Late Toxicity: None 5.8 Vapor (Gas) Irritant Characteristics: None 5.9 Liquid or Solid Irritant Characteristics: None 5.10 Odor Threshold: Data not available	

6. FIRE HAZARDS 6.1 Flash Point: 610°F O.C. 6.2 Flammable Limits in Air: Data not available 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective. 6.5 Special Hazards of Combustion Products: Not pertinent. 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: Data not available 6.8 Electrical Hazard: Not pertinent 6.9 Burning Rate: Data not available	8. WATER POLLUTION 8.1 Aquatic Toxicity: Data not available 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None								
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent	9. SELECTED MANUFACTURERS 1. Ashland Oil Co. Chemical Products Division Pecora, Ill. 61601 2. Sherwin-Williams Co. 101 Prospect Ave. Cleveland, Ohio 44101 3. A. E. Staley Manufacturing Co. Decatur, Ill. 62525								
11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U	10. SHIPPING INFORMATION 10.1 Grades or Purity: Data not available 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)								
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: <table border="1"><thead><tr><th>Category</th><th>Classification</th></tr></thead><tbody><tr><td>Health Hazard (Blue)</td><td>0</td></tr><tr><td>Flammability (Red)</td><td>1</td></tr><tr><td>Reactivity (Yellow)</td><td>0</td></tr></tbody></table>	Category	Classification	Health Hazard (Blue)	0	Flammability (Red)	1	Reactivity (Yellow)	0	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: Very high 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.92 at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: Not pertinent 13.13 Heat of Combustion: (est.) =16,000 Btu/lb = -8,870 cal/g = -371 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent
Category	Classification								
Health Hazard (Blue)	0								
Flammability (Red)	1								
Reactivity (Yellow)	0								
NOTES									

(Continued on pages 5 and 6)

Common Synonyms: Kerosene Kerosol Range oil JP-1	Watery liquid Colorless Kerosene odor Floats on water.
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.	
Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID: LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.
Water Pollution	Dangerous to aquatic life in high concentrations. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.
1. RESPONSE TO DISCHARGE <small>(See Response Methods Handbook, CG 446-4)</small> Mechanical containment Should be removed Chemical and physical treatment	
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: JP-1 Kerosene Kerosine Range oil 3.2 Coast Guard Compatibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.3/1223	
2. LABELS No hazard label required by Code of Federal Regulations	
4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Colorless to light brown 4.3 Odor: Characteristic	
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Protective gloves; goggles or face shield. 5.2 Symptoms Following Exposure: INGESTION causes irritation of gastrointestinal tract; pulmonary tract irritation secondary to exhalation of vapors. ASPIRATION causes severe lung irritation with coughing, gagging, dyspnea, substernal distress, and rapidly developing pulmonary edema; signs of bronchopneumonia and pneumonitis appear later; minimal central nervous system depression. 5.3 Treatment for Exposure: INGESTION: do NOT lavage or induce vomiting; call physician. ASPIRATION: enforce bed rest; administer oxygen; call physician. EYES: wash with plenty of water. SKIN: wipe off and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): 200 ppm (suggested) 5.5 Short-Term Inhalation Limits: Data not available 5.6 Toxicity by Ingestion: Grade I: LD ₅₀ 5-15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary. 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 5.10 Odor Threshold: 1 ppm	

6. FIRE HAZARDS 6.1 Flash Point: 100°F C.C. 6.2 Flammable Limits in Air: 0.7%—5% 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: 444°F 6.8 Electrical Hazard: Not pertinent 6.9 Burning Rate: 4 mm/min.	8. WATER POLLUTION 8.1 Aquatic Toxicity: 2990 ppm/24 hr/bluegill/TLM/fresh water 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): 53%, 5 days 8.4 Food Chain Concentration Potential: None																																				
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent	9. SELECTED MANUFACTURERS 1. Atlantic Richfield 717 Fifth Ave. New York, N. Y. 10022 2. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 3. Sun Oil Co. St. Davids, Pa. 19087																																				
10. SHIPPING INFORMATION 10.1 Grade or Purity: Light hydrocarbon distillate: 100% 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)																																					
11. HAZARD ASSESSMENT CODE <small>(See Hazard Assessment Handbook, CG 446-3)</small> A-T-U	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380–560°F = 193–293°C = 466–566°K 13.4 Freezing Point: –45 to –55°F = –43 to –48°C = 230 to 225°K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81–0.85 at 15°C (liquid) 13.8 Liquid Surface Tension: 23–32 dynes/cm = 0.023–0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: 47–49 dynes/cm = 0.047–0.049 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 110 Btu/lb = 60 cal/g = 2.5 × 10 ³ J/kg 13.13 Heat of Combustion: –18,540 Btu/lb = –10,300 cal/g = –43,124 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent																																				
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: <table data-bbox="932 1395 1179 1672"> <thead> <tr> <th>Category</th><th>Rating</th></tr> </thead> <tbody> <tr> <td>Fire</td><td>2</td></tr> <tr> <td>Health</td><td></td></tr> <tr> <td> Vapor Irritant</td><td>1</td></tr> <tr> <td> Liquid or Solid Irritant</td><td>1</td></tr> <tr> <td> Poisons</td><td>1</td></tr> <tr> <td>Water Pollution</td><td></td></tr> <tr> <td> Human Toxicity</td><td>1</td></tr> <tr> <td> Aquatic Toxicity</td><td>1</td></tr> <tr> <td> Aesthetic Effect</td><td>3</td></tr> <tr> <td>Reactivity</td><td></td></tr> <tr> <td> Other Chemicals</td><td>0</td></tr> <tr> <td> Water</td><td>0</td></tr> <tr> <td> Self-Reaction</td><td>0</td></tr> </tbody> </table> 12.3 NFPA Hazard Classifications: <table data-bbox="932 1693 1179 1779"> <thead> <tr> <th>Category</th><th>Classification</th></tr> </thead> <tbody> <tr> <td>Health Hazard (Blue)</td><td>0</td></tr> <tr> <td>Flammability (Red)</td><td>2</td></tr> <tr> <td>Reactivity (Yellow)</td><td>0</td></tr> </tbody> </table>	Category	Rating	Fire	2	Health		Vapor Irritant	1	Liquid or Solid Irritant	1	Poisons	1	Water Pollution		Human Toxicity	1	Aquatic Toxicity	1	Aesthetic Effect	3	Reactivity		Other Chemicals	0	Water	0	Self-Reaction	0	Category	Classification	Health Hazard (Blue)	0	Flammability (Red)	2	Reactivity (Yellow)	0	NOTES <small>(Continued on pages 5 and 6)</small>
Category	Rating																																				
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OOD

OILS, FUEL: 1-D

Common Synonyms: Diesel oil (light)		Oily liquid: Yellow-brown Lube or fuel oil odor.								
Floats on water:										
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.										
Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.									
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.									
Water Pollution	Dangerous to aquatic life in high concentrations. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.									
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 446-4) Mechanical containment Should be removed Chemical and physical treatment		2. LABELS No hazard label required by Code of Federal Regulations								
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Diesel oil, light 3.2 Coast Guard Compatibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.1/1270		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Light brown 4.3 Odor: Characteristic								
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Protective gloves; goggles or face shield. 5.2 Symptoms Following Exposure: INHALATION causes headache and slight giddiness. INGESTION causes nausea, vomiting, and cramping; depression of central nervous system ranging from mild headache to anesthesia, coma, and death; pulmonary irritation secondary to exhalation of solvent; signs of kidney and liver damage may be delayed. ASPIRATION causes severe lung irritation with coughing, gagging, dyspnea, substernal distress, and rapidly developing pulmonary edema; later, signs of bronchopneumonia and pneumonitis; acute onset of central nervous system excitement followed by depression. 5.3 Treatment for Exposure: INGESTION: do NOT induce vomiting; seek medical attention. ASPIRATION: enforce bed rest; administer oxygen. EYES: wash with copious quantity of water. SKIN: remove solvent by wiping and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): No single value applicable. 5.5 Short-Term Inhalation Limits: Data not available 5.6 Toxicity by Ingestion: Grade 1: LD ₅₀ 3-15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: Slight smarting of eyes or respiratory system if present in high concentrations. The effect is temporary. 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of skin. 5.10 Odor Threshold: Data not available										
6. FIRE HAZARDS 6.1 Flash Point: 100°F C.C. 6.2 Flammable Limits in Air: 1.3%—6% 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective. 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: 350-625°F 6.8 Electrical Hazard: Not pertinent 6.9 Burning Rate: 4 mm/min.										
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent										
8. WATER POLLUTION 8.1 Aquatic Toxicity: 204 mg/l/24 hr/juvenile American shad/TL _m /salt water 8.2 Waterfowl Toxicity: 20 mg/kg LD ₅₀ (mallard) 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None										
9. SELECTED MANUFACTURERS 1. Atlantic Richfield Co. 717 Fifth Ave. New York, N. Y. 10022 2. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 3. Sun Oil Co. St. Davids, Pa. 19087										
10. SHIPPING INFORMATION 10.1 Grades or Purity: Diesel fuel 1-D (ASTM) 10.2 Storage Temperature: Ambient 10.3 Inert Atmospheres: No requirement 10.4 Venting: Open (flame arrester)										
11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U										
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: <table><thead><tr><th>Category</th><th>Classification</th></tr></thead><tbody><tr><td>Health Hazard (Blue)</td><td>0</td></tr><tr><td>Flammability (Red)</td><td>2</td></tr><tr><td>Reactivity (Yellow)</td><td>0</td></tr></tbody></table>			Category	Classification	Health Hazard (Blue)	0	Flammability (Red)	2	Reactivity (Yellow)	0
Category	Classification									
Health Hazard (Blue)	0									
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Reactivity (Yellow)	0									
13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380-560°F = 193-293°C = 466-566°K 13.4 Freezing Point: -30°F = -34°C = 240°K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81-0.85 at 15°C (liquid) 13.8 Liquid Surface Tension: 23-32 dynes/cm = 0.023-0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: 47-49 dynes/cm = 0.047-0.049 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 110 Btu/lb = 60 cal/g = 2.5 × 10 ³ J/kg 13.13 Heat of Combustion: -18,540 Btu/lb = -10,300 cal/g = -431.24 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent										
NOTES										

(Continued on pages 5 and 6)

Common Synonyms: Home-heating oil		Oily liquid Yellow-brown Lube or fuel oil odor Floats on water	
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.			
Fire		Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.	
Exposure		CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. If swallowed, will cause nausea, vomiting. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.	
Water Pollution		Dangerous to aquatic life in high concentrations. Floating to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.	
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 446-4) Mechanical containment Should be removed Chemical and physical treatment		2. LABELS No hazard label required by Code of Federal Regulations	
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Home heating oil 3.2 Coast Guard Competibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.3/1223		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Light brown 4.3 Odor: Like kerosine; characteristic	
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Protective gloves; goggles or face shield. 5.2 Symptoms Following Exposure: INHALATION causes headache and slight giddiness. INGESTION causes nausea, vomiting, and cramping; depression of central nervous system ranging from mild headache to anesthesia, coma, and death; pulmonary irritation secondary to exhalation of solvent; signs of kidney and liver damage may be delayed. ASPIRATION causes severe lung irritation with coughing, gagging, dyspnea, substernal distress, and rapidly developing pulmonary edema; later, signs of bronchopneumonia and pneumonitis; acute onset of central nervous system excitement followed by depression. 5.3 Treatment for Exposure: INGESTION: do NOT induce vomiting. ASPIRATION: enforce bed rest; administer oxygen; seek medical attention. EYES: wash with copious quantity of water. SKIN: remove solvent by wiping and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): No single value applicable. 5.5 Short-Term Inhalation Limits: Data not available 5.6 Toxicity by Ingestion: Grade I: LD ₅₀ 5-15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: Slight smarting of eyes or respiratory system if present in high concentrations. The effect is temporary. 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of skin. 5.10 Odor Threshold: Data not available			

6. FIRE HAZARDS 6.1 Flash Point: 136°F C.C. 6.2 Flammable Limits in Air: Data not available 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: 494°F 6.8 Electrical Hazard: Not pertinent 6.9 Burning Rate: 4 mm/min.		8. WATER POLLUTION 8.1 Aquatic Toxicity: 200 ppm/24 hr/juvenile American shad/TL _m /fresh water 20 ppm/96 hr/rainbow trout eggs/TL _m /salt water 8.2 Waterlow Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None									
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent		9. SELECTED MANUFACTURERS 1. Atlantic Richfield Co. 717 Fifth Ave. New York, N. Y. 10022 2. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 3. Sun Oil Co. St. Davids, Pa. 19087									
11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U		10. SHIPPING INFORMATION 10.1 Grade or Purity: Commercial 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)									
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 HAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: <table border="1"> <thead> <tr> <th>Category</th> <th>Classification</th> </tr> </thead> <tbody> <tr> <td>Health Hazard (Blue)</td> <td>0</td> </tr> <tr> <td>Flammability (Red)</td> <td>2</td> </tr> <tr> <td>Reactivity (Yellow)</td> <td>0</td> </tr> </tbody> </table>		Category	Classification	Health Hazard (Blue)	0	Flammability (Red)	2	Reactivity (Yellow)	0	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 540-640°F = 282-338°C = 555-611°K 13.4 Freezing Point: -20°F = -29°C = 244°K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.87-0.90 at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: Not pertinent 13.13 Heat of Combustion: -19,440 Btu/lb = -10,800 cal/g = -452.17 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent	
Category	Classification										
Health Hazard (Blue)	0										
Flammability (Red)	2										
Reactivity (Yellow)	0										
(Continued on pages 5 and 6)											
NOTES											

Common Synonyms: Diesel oil, medium		Odor: liquid. Yellow-brown. Lube or fuel oil odor.
Fire		Water Pollution
Exposure		8. WATER POLLUTION
Water Pollution		9. SELECTED MANUFACTURERS
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 446-4) Mechanical containment Should be removed Chemical and physical treatment		10. SHIPPING INFORMATION
3. CHEMICAL DESIGNATIONS		11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U
4. OBSERVABLE CHARACTERISTICS		12. HAZARD CLASSIFICATIONS
5. HEALTH HAZARDS		13. PHYSICAL AND CHEMICAL PROPERTIES
6. FIRE HAZARDS		NOTES
7. CHEMICAL REACTIVITY		
8. WATER POLLUTION		
9. SELECTED MANUFACTURERS		
10. SHIPPING INFORMATION		
11. HAZARD ASSESSMENT CODE		
12. HAZARD CLASSIFICATIONS		
13. PHYSICAL AND CHEMICAL PROPERTIES		

Common Synonyms: Residual fuel oil No. 4		Oily liquid. Dark. Lube or fuel oil odor.
Floats on water.		
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.		
Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.	
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.	
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.	
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 446-4) Mechanical containment Should be removed Chemical and physical treatment		2. LABELS No hazard label required by Code of Federal Regulations
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Residual fuel oil, No. 4 3.2 Coast Guard Competibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.3/1223		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Brown 4.3 Odor: Characteristic: like kerosene
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Protective gloves; goggles or face shield. 5.2 Symptoms Following Exposure: INGESTION: gastrointestinal irritation. ASPIRATION: pulmonary irritation is normally minimal but may become more severe several hours after exposure. 5.3 Treatment for Exposure: INGESTION: do NOT lavage or induce vomiting. ASPIRATION: treatment probably not required; delayed development of pulmonary irritation can be detected by serial chest x-rays; consider prophylactic antibiotic regime if condition warrants. EYES: wash with copious quantity of water. SKIN: wipe off and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): Not pertinent 5.5 Short-Term Inhalation Limits: Not pertinent 5.6 Toxicity by Ingestion: Grade I: LD ₅₀ 5 to 15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: None 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 5.10 Odor Threshold: Data not available		

6. FIRE HAZARDS 6.1 Flash Point: >130°F C.C. 6.2 Flammable Limits in Air: 1.0%—5% 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective. 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: 505°F 6.8 Electrical Hazards: Not pertinent 6.9 Burning Rate: 4 mm/min.		8. WATER POLLUTION 8.1 Aquatic Toxicity: Data not available 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerizations: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent		9. SELECTED MANUFACTURERS 1. Atlantic Richfield Co. 717 Fifth Ave. New York, N. Y. 10022 2. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 3. Sun Oil Co. St. Davids, Pa. 19087
11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U		10. SHIPPING INFORMATION 10.1 Grades or Purity: Commercial 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red) 2 Reactivity (Yellow) 0		13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588°C = 374 to 861° K 13.4 Freezing Point: -20 to +15°F = -29 to -9°C = 244 to 264° K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: Not pertinent 13.13 Heat of Combustion: -17,460 Btu/lb = -9,700 cal/g = -406.1 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent
(Continued on pages 5 and 6)		
NOTES		

Common Synonyms: Residual fuel oil No. 5		Oil: Liquid	Color: Dark	Strong kerosene odor
Usually floats on water.				
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.				
Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.			
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.			
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.			
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 446-4) Mechanical containment Should be removed Chemical and physical treatment		2. LABELS No hazard label required by Code of Federal Regulations		
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Residual fuel oil, No. 5 3.2 Coast Guard Competibility Classification: Petroroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.3/1223		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Brown 4.3 Odor: Characteristic; like kerosene		
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Protective gloves; goggles or face shield. 5.2 Symptoms Following Exposure: INGESTION: gastrointestinal irritation. ASPIRATION: pulmonary irritation is normally minimal but may become more severe several hours after exposure. 5.3 Treatment for Exposure: INGESTION: do NOT lavage or induce vomiting. ASPIRATION: treatment probably not required; delayed development of pulmonary irritation can be detected by serial chest x-rays; consider prophylactic antibiotic regime if condition warrants. EYES: wash with copious quantity of water. SKIN: wipe off and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): Not pertinent 5.5 Short-Term Inhalation Limits: Not pertinent 5.6 Toxicity by Ingestion: Grade I: LD ₅₀ 5 to 15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: None 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 5.10 Odor Threshold: Data not available				

6. FIRE HAZARDS 6.1 Flash Point: > 130°F C.C. 6.2 Flammable Limits in Air: 1%—5% 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective. 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: Data not available 6.8 Electrical Hazard: Not pertinent 6.9 Burning Rate: 4 mm/min.	8. WATER POLLUTION 8.1 Aquatic Toxicity: Data not available 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None								
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent	9. SELECTED MANUFACTURERS 1. Atlantic Richfield Co. 717 Fifth Ave. New York, N. Y. 10022 2. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 3. Sun Oil Co. St. Davids, Pa. 19087								
11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U	10. SHIPPING INFORMATION 10.1 Grades or Purity: Fuel oil No. 5 (heavy); Fuel oil No. 5 (light) 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)								
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: <table border="1"><thead><tr><th>Category</th><th>Classification</th></tr></thead><tbody><tr><td>Health Hazard (Blue)</td><td>0</td></tr><tr><td>Flammability (Red)</td><td>2</td></tr><tr><td>Reactivity (Yellow)</td><td>0</td></tr></tbody></table>	Category	Classification	Health Hazard (Blue)	0	Flammability (Red)	2	Reactivity (Yellow)	0	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 426—> 1062°F = 218—>570°C = 491—>843°K 13.4 Freezing Point: 0°F = -18°C = 255°K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 30 dynes/cm = 0.03 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: Not pertinent 13.13 Heat of Combustion: -18,000 Btu/lb = -418.68 X 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent
Category	Classification								
Health Hazard (Blue)	0								
Flammability (Red)	2								
Reactivity (Yellow)	0								
NOTES (Continued on pages 5 and 6)									

Common Synonyms: Bunker C oil Residual fuel oil No. 6	Thick liquid: Black Tar odor: Usually floats on water.
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.	
Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.
Water Pollution	Dangerous to aquatic life in high concentrations. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.
1. RESPONSE TO DISCHARGE <small>(See Response Methods Handbook, CG 446-4)</small> Mechanical containment Should be removed Chemical and physical treatment	2. LABELS No hazard label required by Code of Federal Regulations
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Bunker C oil Residual fuel oil No. 6 3.2 Coast Guard Compatibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.3/1223	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Dark 4.3 Odor: Tarry; like kerosene
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Protective gloves; goggles or face shield. 5.2 Symptoms Following Exposure: INGESTION: gastrointestinal irritation. ASPIRATION: pulmonary irritation is normally minimal but may become more severe several hours after exposure. 5.3 Treatment for Exposure: INGESTION: do NOT lavage or induce vomiting. ASPIRATION: treatment probably not required; delayed development of pulmonary irritation can be detected by serial chest x-rays; consider prophylactic antibiotic regime if condition warrants. EYES: wash with copious quantity of water. SKIN: wipe off and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): Not pertinent 5.5 Short-Term Inhalation Limits: Not pertinent 5.6 Toxicity by Ingestion: Grade I; LD ₅₀ 5 to 15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: None 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 5.10 Odor Threshold: Data not available	

6. FIRE HAZARDS 6.1 Flash Point: > 150°F C.C. 6.2 Flammable Limits in Air: 1%—5% 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: 765°F 6.8 Electrical Hazards: Not pertinent 6.9 Burning Rate: 4 mm/min.	8. WATER POLLUTION 8.1 Aquatic Toxicity: 2400 ppm/48 hr/juvenile American shad/ TL _m /fresh water 2417 mg/l/48 hr/juvenile American shad/ TL _m /salt water 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: Data not available
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerizations: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent	9. SELECTED MANUFACTURERS 1. Atlantic Richfield Co. 717 Fifth Ave. New York, N. Y. 10022 2. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 3. Sun Oil Co. St. Davids, Pa. 19087
11. HAZARD ASSESSMENT CODE <small>(See Hazard Assessment Handbook, CG 446-3)</small> A-T-U	10. SHIPPING INFORMATION 10.1 Grades or Purity: Commercial 10.2 Storage Temperature: Elevated 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red) 2 Reactivity (Yellow) 0	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 415—> 1093°F = 212—> 588°C = 485—> 861°C 13.4 Freezing Point: 25 to 55°F = -4 to +13°C = 269 to 286°C 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.95 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: Not pertinent 13.13 Heat of Combustion: -18,000 Btu/lb = -10,000 cal/g = -418.68 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent
NOTES	

(Continued on pages 5 and 6)

Common Synonyms: Crankcase oil Transmission oil Motor oil		Oily liquid: Yellow-brown: Lube oil odor: Floats on water.
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.		
Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.	
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.	
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.	
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 446-4) Mechanical containment Should be removed Chemical and physical treatment		2. LABELS No hazard label required by Code of Federal Regulations
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Crankcase oil Motor oil Transmission oil 3.2 Coast Guard Compatibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.3/1270		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Yellow fluorescent 4.3 Odor: Characteristic
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Protective gloves; goggles or face shield. 5.2 Symptoms Following Exposure: INGESTION: minimal gastrointestinal tract irritation; increased frequency of bowel passage may occur. ASPIRATION: pulmonary irritation is normally minimal but may become more severe several hours after exposure. 5.3 Treatment for Exposure: INGESTION: do NOT lavage or induce vomiting. ASPIRATION: treatment probably not required; delayed development of pulmonary irritation can be detected by serial chest x-rays. EYES: wash with copious quantity of water. SKIN: wipe oil and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): Data not available 5.5 Short-Term Inhalation Limits: Data not available 5.6 Toxicity by Ingestion: Grade I; LD ₅₀ 5 to 15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary. 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 5.10 Odor Threshold: Data not available		

<div>6. FIRE HAZARDS</div> <div><div>6.1 Flash Points: 300°F-450°F C.C.</div><div>6.2 Flammable Limits in Air: Data not available</div><div>6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide</div><div>6.4 Fire Extinguishing Agents Not to be Used: Water of foam may cause frothing.</div><div>6.5 Special Hazards of Combustion Products: Not pertinent</div><div>6.6 Behavior in Fire: Not pertinent</div><div>6.7 Ignition Temperature: 500°F —700°F</div><div>6.8 Electrical Hazard: Not pertinent</div><div>6.9 Burning Rate: 4 mm/min.</div></div>		<div>8. WATER POLLUTION</div> <div><div>8.1 Aquatic Toxicity: Data not available</div><div>8.2 Waterfowl Toxicity: Data not available</div><div>8.3 Biological Oxygen Demand (BOD): Data not available</div><div>8.4 Food Chain Concentration Potential: None</div></div>									
<div>7. CHEMICAL REACTIVITY</div> <div><div>7.1 Reactivity with Water: No reaction</div><div>7.2 Reactivity with Common Materials: No reaction</div><div>7.3 Stability During Transport: Stable</div><div>7.4 Neutralizing Agents for Acids and Caustics: Not pertinent</div><div>7.5 Polymerization: Not pertinent</div><div>7.6 Inhibitor of Polymerization: Not pertinent</div></div>		<div>9. SELECTED MANUFACTURERS</div> <div><div>1. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001</div><div>2. Standard Oil Co. (Indiana) 910 S. Michigan Ave. Chicago, Ill. 60605</div><div>3. Sun Oil Co. St. Davids, Pa. 19087</div></div>									
		<div>10. SHIPPING INFORMATION</div> <div><div>10.1 Grades or Purity: Various viscosities</div><div>10.2 Storage Temperature: Ambient</div><div>10.3 Inert Atmosphere: No requirement</div><div>10.4 Venting: Open (flame arrester)</div></div>									
<div>11. HAZARD ASSESSMENT CODE</div> <div><div>(See Hazard Assessment Handbook, CG 446-3)</div><div>A-T-U</div></div>		<div>13. PHYSICAL AND CHEMICAL PROPERTIES</div> <div><div>13.1 Physical State at 15°C and 1 atm: Liquid</div><div>13.2 Molecular Weight: Not pertinent</div><div>13.3 Boiling Point at 1 atm: Very high</div><div>13.4 Freezing Point: Not pertinent</div><div>13.5 Critical Temperature: Not pertinent</div><div>13.6 Critical Pressure: Not pertinent</div><div>13.7 Specific Gravity: 0.84-0.96 at 15°C (liquid)</div><div>13.8 Liquid Surface Tension: 36-37.5 dynes/cm = 0.036-0.0375 N/m at 20°C</div><div>13.9 Liquid-Water Interfacial Tension: 33-34 dynes/cm = 0.033-0.034 N/m at 20°C</div><div>13.10 Vapor (Gas) Specific Gravity: Not pertinent</div><div>13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent</div><div>13.12 Latent Heat of Vaporization: Not pertinent</div><div>13.13 Heat of Combustion: -18,486 Btu/lb = -10,270 cal/g = -429.98 × 10³ J/kg</div><div>13.14 Heat of Decomposition: Not pertinent</div><div>13.15 Heat of Solution: Not pertinent</div><div>13.16 Heat of Polymerization: Not pertinent</div></div>									
<div>12. HAZARD CLASSIFICATIONS</div> <div><div>12.1 Code of Federal Regulations: Not listed</div><div>12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed</div><div>12.3 NFPA Hazard Classifications:<table><tr><td>Category</td><td>Classification</td></tr><tr><td>Health Hazard (Blue)</td><td>0</td></tr><tr><td>Flammability (Red)</td><td>1</td></tr><tr><td>Reactivity (Yellow)</td><td>0</td></tr></table></div></div>		Category	Classification	Health Hazard (Blue)	0	Flammability (Red)	1	Reactivity (Yellow)	0		
Category	Classification										
Health Hazard (Blue)	0										
Flammability (Red)	1										
Reactivity (Yellow)	0										
<div>Continued on pages 5 and 6</div>											
<div>NOTES</div>											

Common Synonyms: Crankcase oil Lubricating oil	Oil Liquid: Yellow-brown Lube oil odor: Floats on water:
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.	
Fire	Combustible: Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.
1. RESPONSE TO DISCHARGE <small>(See Response Methods Handbook, CG 446-4)</small> Mechanical containment Should be removed Chemical and physical treatment	
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Crankcase oil Lubricating oil Transmission oil 3.2 Coast Guard Competibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.3/1270	
2. LABELS No hazard label required by Code of Federal Regulations	
4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Yellow fluorescent 4.3 Odor: Characteristic	
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Protective gloves; goggles or face shield. 5.2 Symptoms Following Exposure: INGESTION: minimal gastrointestinal irritation; increased frequency of bowel passage may occur. ASPIRATION: pulmonary irritation is normally minimal but may become more severe several hours after exposure. 5.3 Treatment for Exposure: INGESTION: do NOT lavage or induce vomiting. ASPIRATION: treatment probably not required; delayed development of pulmonary irritation can be detected by serial chest x-rays. EYES: wash with copious amounts of water. SKIN: wipe off oil and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): Data not available 5.5 Short-Term Inhalation Limits: Data not available 5.6 Toxicity by Ingestion: Grade I: LD ₅₀ 5 to 15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary. 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 5.10 Odor Threshold: Data not available	

6. FIRE HAZARDS 6.1 Flash Point: -275-600°F C.C. 6.2 Flammable Limits in Air: Data not available 6.3 Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: 325-625°F 6.8 Electrical Hazards: Not pertinent 6.9 Burning Rate: 4 mm/min.	8. WATER POLLUTION 8.1 Aquatic Toxicity: Data not available 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent	9. SELECTED MANUFACTURERS 1. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 2. Standard Oil Co. (Indiana) 910 S. Michigan Ave. Chicago, Ill. 60605 3. Sun Oil Co. St. Davids, Pa. 19087
11. HAZARD ASSESSMENT CODE <small>(See Hazard Assessment Handbook, CG 446-3)</small> A-T-U	10. SHIPPING INFORMATION 10.1 Grades or Purity: Various viscosities 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: Not listed	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: Very high 13.4 Freezing Point: -29.9°F = -34.4°C = 238.8°K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.84-0.96 at 15°C (liquid) 13.8 Liquid Surface Tension: 36-37.5 dynes/cm = 0.036-0.0375 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: 33-54 dynes/cm = 0.033-0.054 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: Not pertinent 13.13 Heat of Combustion: -18,486 Btu/lb = -10,270 cal/g = -429.98 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent
NOTES <small>(Continued on pages 5 and 6)</small>	

ORG

OILS, MISCELLANEOUS: RANGE

Common Synonyms: Kerosene Kerosene Fuel oil No. 1 JP-1		Watery liquid Colorless Kerosene odor Floats on water.																													
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.																															
Fire		Combustible. Extinguish with foam, dry chemical, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.																													
Exposure		CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.																													
Water Pollution		Dangerous to aquatic life in high concentrations. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.																													
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 446-4) Mechanical containment Should be removed Chemical and physical treatment		2. LABELS No hazard label required by Code of Federal Regulations																													
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: No. 1 Fuel Oil JP-1 Kerosene Kerosine 3.2 Coast Guard Compatibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.3/1223		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Colorless 4.3 Odor: Like kerosene																													
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Protective gloves; goggles or face shield. 5.2 Symptoms Following Exposure: Vapor causes slight irritation of eyes and nose. Liquid irritates stomach; if taken into lungs, causes coughing, distress, and rapidly developing pulmonary edema. 5.3 Treatment for Exposure: ASPIRATION: enforce bed rest; administer oxygen; call a doctor. INGESTION: do NOT induce vomiting; call a doctor. EYES: wash with copious amounts of water. SKIN: wipe off and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): 200 ppm 5.5 Short-Term Inhalation Limits: Data not available 5.6 Toxicity by Ingestion: Grade I; LD ₅₀ 5 to 15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: Vapors cause slight smarting of eyes and respiratory system if present in high concentrations. The effect is temporary. 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 5.10 Odor Threshold: 1 ppm																															
6. FIRE HAZARDS 6.1 Flash Point: -100°F C.C. 6.2 Flammable Limits in Air: 0.7%—5% 6.3 Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: 444°F 6.8 Electrical Hazard: Not pertinent 6.9 Burning Rate: 4 mm/min.																															
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustics: Not pertinent 7.5 Polymerization: Not pertinent 7.6 Inhibitor of Polymerization: Not pertinent																															
8. WATER POLLUTION 8.1 Aquatic Toxicity: 2990 ppm/24 hr/bluegill/TL _m /fresh water 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): 53%, 5 days 8.4 Food Chain Concentration Potential: None																															
9. SELECTED MANUFACTURERS 1. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 2. Standard Oil Co. (Indiana) 910 S. Michigan Ave. Chicago, Ill. 60605 3. Sun Oil Co. St. Davids, Pa. 19087																															
10. SHIPPING INFORMATION 10.1 Grades or Purity: Light hydrocarbon distillate: 100% 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)																															
11. HAZARD ASSESSMENT CODE See Hazard Assessment Handbook, CG 446-3) A-T-U																															
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: <table border="1"><thead><tr><th>Category</th><th>Rating</th></tr></thead><tbody><tr><td>Fire</td><td>2</td></tr><tr><td>Health</td><td></td></tr><tr><td>Vapor Irritant</td><td>1</td></tr><tr><td>Liquid or Solid Irritant</td><td>1</td></tr><tr><td>Poisons</td><td>1</td></tr><tr><td>Water Pollution</td><td></td></tr><tr><td>Human Toxicity</td><td>1</td></tr><tr><td>Aquatic Toxicity</td><td>1</td></tr><tr><td>Aesthetic Effect</td><td>3</td></tr><tr><td>Reactivity</td><td></td></tr><tr><td>Other Chemicals</td><td>0</td></tr><tr><td>Water</td><td>0</td></tr><tr><td>Self-Reaction</td><td>0</td></tr></tbody></table>				Category	Rating	Fire	2	Health		Vapor Irritant	1	Liquid or Solid Irritant	1	Poisons	1	Water Pollution		Human Toxicity	1	Aquatic Toxicity	1	Aesthetic Effect	3	Reactivity		Other Chemicals	0	Water	0	Self-Reaction	0
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13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 392-500°F = 200-260°C = 473-533°K 13.4 Freezing Point: -45 to -55°F = -43 to -48°C = 230 to 225°K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.80-0.85 at 20°C (liquids) 13.8 Liquid Surface Tension: 23-32 dynes/cm = 0.023-0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: 47-49 dynes/cm = 0.047-0.049 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 108 Btu/lb = 60 cal/g = 2.51 × 10 ³ J/kg 13.13 Heat of Combustion: -18,540 Btu/lb = -10,300 cal/g = -431.24 × 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent																															
NOTES																															

(Continued on pages 5 and 6)

Common Synonyms: Insulating oil Electrical insulating oil Petroleum insulating oil		Oily liquid Colorless to light brown Motor oil-like odor Floats on water
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.		
Fire	Combustible. Extinguish with foam, dry chemical, carbon dioxide. Water may be ineffective on fire.	
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is UNCONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.	
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.	
1. RESPONSE TO DISCHARGE (See Response Methods Handbook, CG 446-4) Mechanical containment Should be removed Chemical and physical treatment		2. LABELS No hazard label required by Code of Federal Regulations
3. CHEMICAL DESIGNATIONS 3.1 Synonyms: Electrical insulating oil Insulating oil Petroleum insulating oil 3.2 Coast Guard Competibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 3.4 IMCO/United Nations Numerical Designation: 3.3/1270		4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Colorless to light brown 4.3 Odor: Like motor oil
5. HEALTH HAZARDS 5.1 Personal Protective Equipment: Protective gloves; goggles or face shield. 5.2 Symptoms Following Exposure: Ingestion of liquid may irritate stomach and cause increased frequency of bowel movements. If taken into lungs, delayed pulmonary irritation may occur. 5.3 Treatment for Exposure: INGESTION: do NOT induce vomiting. ASPIRATION: check for delayed irritation by serial X-rays. EYES: wash with copious amounts of water. SKIN: wipe off and wash with soap and water. 5.4 Toxicity by Inhalation (Threshold Limit Value): Data not available 5.5 Short-Term Inhalation Limits: Data not available 5.6 Toxicity by Ingestion: Grade I: LD ₅₀ 5 to 15 g/kg 5.7 Late Toxicity: Data not available 5.8 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary. 5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 5.10 Odor Threshold: Data not available		

6. FIRE HAZARDS 6.1 Flash Point: 295°F O.C. 6.2 Flammable Limits in Air: Data not available 6.3 Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective. 6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: Data not available. 6.8 Electrical Hazard: Not pertinent 6.9 Burning Rate: Data not available		8. WATER POLLUTION 8.1 Aquatic Toxicity: Data not available 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None								
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11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U		13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: Very high 13.4 Freezing Point: -75°F = - 59°C = 214°K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.88 at 15°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: 49 dynes/cm = 0.049 N/m at 25°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: Not pertinent 13.13 Heat of Combustion: (est.) -18,000 Btu/lb = -10,000 cal/g = -420 X 10 ³ J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent								
12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations: Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation: Not listed 12.3 NFPA Hazard Classifications: <table><tr><th>Category</th><th>Classification</th></tr><tr><td>Health Hazard (Blue)</td><td>0</td></tr><tr><td>Flammability (Red)</td><td>1</td></tr><tr><td>Reactivity (Yellow)</td><td>0</td></tr></table>		Category	Classification	Health Hazard (Blue)	0	Flammability (Red)	1	Reactivity (Yellow)	0	
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